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EXAMINER	
WILSON, MICHAEL C	

ART UNIT	PAPER NUMBER
1633	19

DATE MAILED: 01/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/204,427	HADDADA ET AL.	
	Examiner	Art Unit	
	Michael Wilson	1633	

-- The MAILING DATE of this communication app ars on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *17* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Prosecution Application

The request filed on 11-01-01, paper number 15, for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/204427 is acceptable and a CPA has been established. An action on the CPA follows.

Applicant's arguments filed 11-01-01, paper number 16, have been fully considered but they are not persuasive. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. Claims 6-8 and 14 have been canceled. Claims 15-22 have been added. Please note the second claim numbered 21 has been renumbered claim 22. Claims 15-22 are pending and under consideration in the instant invention.

Priority

The status of 08/150,011 should be updated in the first line of the specification. It is noted that the bibliographic data sheet has a gap in the chain of priority because it does not include application PCT/FR93/00264, filed 3-16-93, WO/9319191.

Claim Objections

The phrase "an insert containing" in claims 15 and 21 should be deleted.

The phrase ", wherein said insert is" in claims 15 and 21 should be deleted.

The phrase "those sequences which carry genetic information" should be replaced with "nucleic acid sequences" to be more clear.

The phrase "a set of" should be deleted.

The phrase "the transactivators E1A and E1B and E3 region" should be replaced with "the E1A, E1B and E3 regions".

The phrase "genomic sequence of the" in claim 16 should be deleted.

The phrase "wherein the genomic sequence of the adenovirus has a heterologous promoter and" in claim 18 should be deleted.

The term "placed" should be deleted throughout the claims.

Claim 20 should begin "The method according to...."

A comma should be inserted after "tumor necrosis factor" in claim 20.

A commas should be inserted after each occurrence of the phrase "The method according to claim 15".

Claim Rejections - 35 USC § 112

1. Claims 15-22 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The limitation of "a pharmaceutical composition" comprising an adenovirus and "a pharmaceutically acceptable vehicle" (claims 15, 21) does not have support in the specification as originally filed.

The limitation of an "endogenous" or "heterologous" promoter (claims 15, 18) does not have support in the specification as originally filed.

The limitation of "separate nucleic acid sequences coding for different cytokines" each of which is operably linked to a promoter (claim 19) does not have support in the specification as originally filed.

The limitation of "colony stimulating factor" (claim 20) does not have support in the specification as originally filed.

The limitation of injecting a pharmaceutical composition into cells which infiltrate said tumor (claim 21) does not have support in the specification as originally filed.

Applicants should point to support for such amendments by page and line number.

2. Claims 15-22 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The specification as originally filed does not provide adequate written description for replication defective adenoviruses encoding a cytokine operatively linked to an early or "heterologous" promoter used to treat a tumor in a patient. An adequate written description of

such adenoviruses requires more than a mere statement that it is part of the invention and reference to a potential method for making it; what is required is a description of the promoters and a description of how to make the adenovirus. It is not sufficient to define an adenoviral vector for gene therapy solely by its principal biological property, i.e. to treat a tumor in a patient when injected intratumorally or into cells that infiltrate tumors, because disclosure of no more than that is simply a wish to identify adenoviral vectors with the DNA encoding the cytokine operably linked to an early or "heterologous" promoter having that biological property. Thus, claiming all replication defective adenoviral vectors encoding a cytokine operably linked to an early promoter or "heterologous" promoter that are able to treat a tumor without defining the promoters or how to make such vectors is not in compliance with the description requirement. Rather, it is an attempt to preempt the future before it has arrived. (See *Fiers v. Revel*, 25 USPQ2d 1601 (CA FC 1993) and *Regents of the Univ. Calif. v. Eli Lilly & Co.*, 43 USPQ2d 1398 (CA FC, 1997)).

Likewise the specification does not provide adequate written description for replication defective adenoviruses encoding more than one cytokine used to treat a tumor in a patient. The specification does not teach a vector encoding two copies of one cytokine, two different cytokines or how the copies are operably linked to promoters. The specification does not teach the combination of cytokines in a vector required to treat tumors administered as claimed or the resulting therapeutic effect. An adequate written description of such adenoviruses requires more than a mere statement that it is part of the invention and reference to a potential method for

making it; what is required is a description of the combination of elements and a description of the resulting effect. Therefore, claim 19 lacks written description.

3. Claims 15-22 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for administering a replication defective adenoviral vector intratumorally to a patient such that growth of the tumor is inhibited, wherein said vector encodes IL-2 or γ-INF operably linked to the adenoviral late promoter, does not reasonably provide enablement for administering the vector "into cells which infiltrate said tumor", using an adenoviral vector encoding IL-1, IL-3, IL-4, IL-5, IL-6, α-INF, TNF or CSF to treat tumors, using an adenoviral vector comprising DNA encoding the cytokine operably linked to an early or "heterologous" promoter to treat tumors or an adenoviral vector encoding two or more cytokines to treat tumors. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The combination of promoter, DNA encoding a cytokine and route of administration required to obtain a therapeutic effect against a tumor using adenoviral gene therapy *in vivo* was unpredictable at the time the invention was made. In particular, it was unpredictable how to target adenoviral vectors to tumors *in vivo* using any route of administration. Miller (1995, FASEB J., Vol. 9, pages 190-199) reviewed adenoviral vectors available for *in vivo* gene therapy, and conclude that "for the long-term success as well as the widespread applicability of human

gene therapy, there will have to be advances...targeting strategies outlined in this review, which are currently only at the experimental level, will have to be translated into components of safe and highly efficient delivery systems" (page 192, col. 2; page 198, column 1). Deonarain (1998, Expert Opin. Ther. Pat., Vol. 8, pages 53-69) indicates that one of the biggest problems hampering successful gene therapy continues to be the "ability to target a gene to a significant population of cells and express it at adequate levels for a long enough period of time" (page 53, first paragraph). Verma (Sept. 1997, Nature, Vol. 389, pages 239-242) reviewed adenoviral vectors known in the art for use in gene therapy and discusses problems associated with them (page 241, col. 1). Verma indicated a resolution to vector targeting has not been achieved in the art (see entire article). Crystal (1995, Science, Vol. 270, page 404-410) also reviewed adenoviral vectors known in the art and indicated that "among the design hurdles for all vectors are the need to increase the efficiency of gene transfer, to increase target specificity and to enable the transferred gene to be regulated" (para. bridging pages 404-405; page 406, col. 2, line 7; page 409).

Viral vectors encoding IL-2 and γ-IFN administered intratumorally to inhibit tumor growth were known in the art at the time the invention was made (Nabel, US Patent 6,297,219, Oct. 2, 2001; Barber, US Patent 5,662,896, Sept. 2, 1997). Replication defective adenoviral vectors encoding protein operably linked to the late promoter used to obtain protein expression *in vivo* were known in the art at the time the invention was made (Crystal, US Patent 6,013,638, Jan. 11, 2000; Rosenfeld, 1991, Science, Vol. 252, pages 431-434). The art at the time of filing

did not teach administering adenoviral vectors *in vivo* by any mode of delivery such that "cells which infiltrate said tumor" were targeted, infecting "cells which infiltrate said tumor" *ex vivo* with an adenoviral vector and administering the cells into the patient such that a therapeutic effect was obtained, using a vector encoding IL-1, IL-3, IL-4, IL-5, IL-6, α-IFN, TNF or CSF to treat tumors, or using an adenoviral vector encoding the cytokine operably linked to an early or "heterologous" promoter to treat tumors.

The specification teaches direct injection of "the vector" carrying IL-2 into tumors leads to tumor regression (para. bridging pages 12 and 13) which is assumed to be the adenovirus encoding a cytokine operably linked to the late promoter described in the paragraph bridging pages 9 and 10. The specification does not teach administering a viral vector into a remote site such that cells that infiltrate the tumor are targeted. Nor does the specification teach administering a viral vector into a remote site or directly injecting cells infected *ex vivo* into a tumor such that a therapeutic effect is obtained. Without such guidance, it would require one of skill undue experimentation to determine modes of delivery other than intratumoral injection that target tumor cells and provide a therapeutic effect.

The specification does not enable using a adenoviral vector encoding IL-1, IL-3, IL-4, IL-5, IL-6, α-IFN, TNF or CSF to treat tumors because the specification does not teach the level of IL-1, IL-3, IL-4, IL-5, IL-6, α-IFN, TNF or CSF required to obtain a therapeutic effect or correlate the level of expression of IL-2 or γ-IFN known in the art to inhibit tumor growth with the level of IL-1, IL-3, IL-4, IL-5, IL-6, α-IFN, TNF or CSF required to obtain an equivalent

effect. Without such guidance, it would require one of skill undue experimentation to determine how to use any cytokines other than IL-2 or γ-IFN to treat tumor cells as claimed.

The specification does not enable one of skill in the art at the time the invention was made to make or use an adenoviral vector comprising DNA encoding a cytokine operably linked to the adenoviral early promoter or "heterologous" promoter to treat tumors. The specification does not teach any heterologous promoters or any heterologous promoters that provide expression equivalent to the late adenoviral promoter. The specification does not correlate the early and late adenoviral promoters such that equivalent expression of cytokine could be obtained. Without such guidance, it would require one of skill undue experimentation to determine how to make and/or use an adenoviral vector encoding a cytokine operably linked to the early promoter or a "heterologous" promoter that provides a therapeutic effect *in vivo*.

The specification does not teach a vector encoding at least two cytokines or how the DNA encoding the cytokines are operably linked to promoters. The specification does not teach the combination of cytokines required to treat tumors using adenoviral vectors administered as claimed or the resulting therapeutic effect. Enablement of such adenoviruses requires more than a mere statement that it is part of the invention and reference to a potential method for making it; what is required is adequate guidance regarding the combination of elements and the resulting effect. Without such guidance, it would have required one of skill undue experimentation to determine how to use an adenoviral vector encoding two or more cytokines to treat tumors.

Given the unpredictability in the art taken with the lack of teachings in the specification, it would require one of skill in the art at the time the invention was made undue experimentation to determine how to administer a viral vector "into cells which infiltrate said tumor" such that tumor growth was inhibited, use a vector encoding IL-1, IL-3, IL-4, IL-5, IL-6, α-IFN, TNF or CSF to treat tumors, to make and/or use an adenoviral vector comprising DNA encoding the cytokine operably linked to the early or "heterologous" promoter to treat tumors or an adenoviral vector encoding two or more cytokines to treat tumors.

The specification and the art at the time of filing did not teach sequences "needed" for adenovirus to enter a cell or "essential" sequences "needed" for encapsidation. Furthermore, the specification does not distinguish how sequences needed for adenovirus to enter a cell, replication and encapsidation are related because replication and encapsidation are required before an adenovirus enters a cell. Clarification is required.

The declaration by Philippe Slos has been considered but is not persuasive. Overall, it cannot be determined that the post-filing references use a combination of elements that were taught in the instant specification; therefore, the post-filing references do not correlate to the instant specification. Exhibits 1, 4 and 10 use IL-12 which was not contemplated in the instant specification. Exhibits 1, 4 and 10 teach using the CMV promoter to control expression of the cytokine. Exhibit 2 teaches using IFN-con1 which is not taught in the specification. While the specification contemplates using the CMV in place of the late promoter (page 14, line 4-9), the exhibits do not teach the late promoter was replaced with the CMV promoter. Nor does the

specification teach where to insert a nucleic acid sequence encoding a cytokine operably linked to a promoter into the adenoviral vector. Thus, the specification as originally filed does provide adequate guidance for one of skill to make the adenoviral vectors taught in exhibits 1, 4 or 10. Exhibits 2, 3, 5, 6, 8 do not teach the promoter used to obtain adequate expression. Exhibit 5 does not teach the adenovirus lacks E1A, E1B and E3. Exhibits 5, 6, 8 do not teach the mode of administration. Exhibit 7 does not teach using a cytokine. Exhibit 8 teaches deleting the E4 region which is not taught in the specification. Exhibit 9 is a general reference and does not teach the combination of promoter, cytokine and route of administration required to treat tumors using a replication defective adenoviral vector.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 15-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 15 and 21 are indefinite because the metes and bounds of the adenoviral DNA sequences that are and are not encompassed by the claims cannot be determined. The specification and the art at the time of filing did not define sequences "needed" for adenovirus to enter a cell or sequences "essential" for encapsidation. Furthermore, sequences needed for an

adenovirus to enter a cell may be sequences required for adenoviral replication or encapsidation. Clarification is required.

The metes and bounds of cells "capable" of being infected by adenovirus cannot be determined.

Claims 15 and 21 are indefinite because part (a)(i) requires the adenovirus lacks a sequence needed for its replication and part (a)(iii) requires the vector lacks E1A, E1B and E3 which are need for replication. It is unclear if the adenovirus lacks E1A, E1B and E3 or if the adenovirus lacks E1A, E1B, E3 and another sequence required for replication. Clarification is required.

Claims 15 and 21 are indefinite because "the corresponding adenovirus" lacks antecedent basis.

Claim 16 is indefinite because the adenoviral vector of claim 15 may have the early promoter deleted.

Claim 16 is indefinite because the metes and bounds of the deletions encompassed by the claim cannot be determined. It is unclear if anything 5' of the early promoter may be deleted or if the "5' end region downstream of the early promoter" is a particular sequence downstream of the early promoter. In fact, use of both "5' end" and "downstream" is redundant.

The use of "its" and "this" in claim 15, 16, 21 and elsewhere is unclear because it cannot be determined to what "its" and "this" refers.

Claim 19 is indefinite because the metes and bounds of "nucleic acid sequences coding for several cytokines or separate nucleic acid sequences coding for different cytokines, wherein said nucleic acid inserts are placed under the control of separate promoters" cannot be determined. The structures, number of copies of DNA encoding cytokines within one adenoviral vector, the difference between the cytokines (if any) and their relationship to the promoter cannot be determined. It cannot be determined if applicants intend to claim two or more copies of an adenoviral vector encoding a cytokine operably linked to a promoter, an adenoviral vector comprising at least two nucleic acid sequences encoding a cytokine operably linked to a single promoter, an adenoviral vector comprising at least two nucleic acid sequences encoding a cytokine each of which is operably linked to a promoter, an adenoviral vector comprising nucleic acid sequences encoding at least two different cytokines operably linked to a single promoter or an adenoviral vector comprising nucleic acid sequences encoding at least two different cytokines each of which is operably linked to a promoter.

It is unclear if "said nucleic acid inserts" in claim 19 refers to the inserts in the parent claim or to the nucleic acid sequence coding for several cytokines.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber (US Patent 5,662,896, Sept. 2, 1997) in view of Rosenfeld (1991, Science, Vol. 252, pages 431-434).

Barber taught administering a retroviral vector encoding a cytokine, such as IL-2, in a pharmaceutically acceptable carrier intratumorally (claim 1). Barber did not expressly teach administering a replication defective adenoviral vector. However, at the time of filing Rosenfeld taught a replication defective adenoviral vector with a deletion in the E1A, E1B and E3 regions comprising a nucleic acid sequence encoding a protein operatively linked to the late promoter (page 431, col. 3, 1st para.; page 432, Fig. 1). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to administer a viral vector encoding a cytokine in a pharmaceutically acceptable carrier intratumorally as taught by Barber using the replication defective adenoviral vector of Rosenfeld. Motivation is provided by Barber who suggests using the adenoviral vector of Rosenfeld to deliver the cytokine to the tumor (col. 10, line 56).

The adenovirus of Rosenfeld lacks the 5' end downstream of the early promoter of E1A (claim 16). The linkage of the DNA encoding the cytokine to a promoter in claim 16 cannot be determined because the early promoter may be deleted and because the DNA may be operably linked to the late promoter (see 112/2nd). The late promoter is a "heterologous" promoter (claim 18) because the adenoviral late promoter is heterologous to the cytokine. The numerous copies

of the adenoviral vector encoding IL-2 operably linked to the late promoter as taught by the combined teachings of Barber and Rosenfeld are equivalent to separate nucleic acids sequences coding for different cytokines each placed under the control of separate promoters (claim 20) because each copy of DNA encoding IL-2 is separate and operably linked to its own promoter. Two copies of an identical cytokine are considered "different cytokines" (just as two copies of a newspaper are considered "different" newspapers) because they are distinct entities. Injecting the adenovirus into the tumor as taught by the combined teachings of Barber and Rosenfeld is equivalent to injecting adenovirus into cells which infiltrate said tumor (claim 21) because the injection inherently infects lymphocytes within the tumor.

Thus, Applicants' claimed invention as a whole is *prima facie* obvious in the absence of evidence to the contrary.

6. Claims 15-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nabel (US Patent 6,297,219, Oct. 2, 2001) in view of Crystal (US Patent 6,013,638, Jan. 11, 2000).

Nabel taught administering an adenoviral vector encoding a cytokine in a pharmaceutically acceptable carrier intratumorally (claims 1, 9, 13). Nabel did not teach the adenoviral vector had a deletion in E1A, E1B and E3. However, at the time of filing, Crystal taught an adenoviral vector with a deletion in E1A, E1B and E3 encoding a protein operably linked to the adenoviral late promoter (Fig.1, claim 1). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to administer an adenoviral vector

encoding a cytokine in a pharmaceutically acceptable carrier intratumorally as taught by Nabel using the replication defective adenoviral vector of Crystal. One of ordinary skill in the art at the time the invention was made would have been motivated to delete E1A, E1B and E3 as taught by Crystal in the method of Nabel to decrease the replication of the adenovirus *in vivo* and because Crystal taught the replication defective adenovirus expressed protein *in vivo*.

The adenovirus of Rosenfeld lacks the 5' end downstream of the early promoter of E1A (claim 16). The linkage of the DNA encoding the cytokine to a promoter in claim 16 cannot be determined because the early promoter may be deleted and because the DNA may be operably linked to the late promoter (see 112/2nd). The late promoter is a "heterologous" promoter (claim 18) because the adenoviral late promoter is heterologous to the cytokine. The numerous copies of the adenoviral vector encoding IL-2 operably linked to the late promoter as taught by the combined teachings of Barber and Rosenfeld are equivalent to separate nucleic acids sequences coding for different cytokines each placed under the control of separate promoters (claim 20) because each copy of DNA encoding IL-2 is separate and operably linked to its own promoter. Two copies of an identical cytokine are considered "different cytokines" (just as two copies of a newspaper are considered "different" newspapers) because they are distinct entities. Injecting the adenovirus into the tumor as taught by the combined teachings of Barber and Rosenfeld is equivalent to injecting adenovirus into cells which infiltrate said tumor (claim 21) because the injection inherently infects lymphocytes within the tumor.

Thus, Applicants' claimed invention as a whole is *prima facie* obvious in the absence of evidence to the contrary.

Conclusion

No claim is allowed.

Inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wilson who can normally be reached on Monday through Friday from 9:00 am to 5:30 pm at (703) 305-0120.

Questions of formal matters can be directed to the patent analyst, Tracey Johnson, who can normally be reached on Monday through Friday from 9:00 am to 5:30 pm at (703) 305-2982.

Questions of a general nature relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1235.

If attempts to reach the examiner, patent analyst or Group receptionist are unsuccessful, the examiner's supervisor, Deborah Clark, can be reached on (703) 305-4051.

The official fax number for this Group is (703) 308-4242.

Michael C. Wilson

MICHAEL C. WILSON
PATENT EXAMINER